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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,641	03/15/2002	Wilbur G. Catabay	99-102/1D	4975

24319 7590 07/16/2003

LSI LOGIC CORPORATION
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EXAMINER

KILDAY, LISA A

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/099,641

Applicant(s)

CATABAY ET AL.

Examiner

Lisa A Kilday

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeng (5,281,621). In re claims 15-16, 18-19, Jeng discloses in figs. 1-4 a composite layer of low k silicon oxide dielectric material (22) on an oxide layer (12) of an IC (fig. 1), said composite layer of low k silicon oxide dielectric material exhibiting void-free deposition properties (col. 4 lines 1-5), comprising: a first layer of low k silicon oxide dielectric material exhibiting void-free deposition properties (22); and a second layer of low k silicon oxide dielectric material (24) to a desired thickness.

In re claim 17, Jeng discloses a composite layer of low k carbon doped silicon oxide (22, col. 1 lines 45-55, table in col. 5) exhibiting void-free deposition properties, comprising: a first layer of low k carbon-doped silicon oxide dielectric (22); and a second layer of carbon-doped low k silicon oxide (24) by PECVD (col. 4 lines 63-65).

Response to Arguments

Applicant's arguments filed 4/9/03 have been fully considered but they are not persuasive. Applicant argues that the liner layer (22) in Jeng is not a low k dielectric layer. Applicant's point is moot for five reasons. First, the instant claims fail to claim the dielectric constant or properties associated with a low k dielectric. Second, Jeng discloses in figs. 1-4 a low k Silicon oxide dielectric layer (22). Third, it is well known in

Art Unit: 2829

the art that Silicon oxide is a low k dielectric. Fourth, the dielectric constant of Silicon oxide is 3.8-4.2, which is considered low k dielectric (see Nalwa, Handbook of Low and High Dielectric Constant Materials and Their Applications, vol. 1, pg. 66, (1999)). Fifth, Jeng teaches that low k means a dielectric lower than 4.0. Therefore, the method of Jeng teaches Silicon oxide as the first layer, which is inherently teaching low k dielectric because the values of the dielectric constant for Silicon oxide are inherent to be in the art recognized range of lower than 4.0.

Applicant argues that Jeng fails to teach the limitation of low k carbon-doped Silicon oxide in claim 17. This point is not persuasive. Jeng teaches that the low k layers are from polymers, which are carbon-doped Silicon oxide.

Applicant again brings up the argument that Jeng's layer 22 is not a low k dielectric layer. This argument has been responded to in the preceding paragraphs.

Applicant's argue that the table in col. 5 of Jeng cannot be relied on because it is inconsistent with Jeng's specification. The examiner agrees. The examiner did not rely on the information in the table for her rejection. The applicant should note that the reference numbers in the table such as (20) refer to "non-critical areas" in fig. 2 (col. 4, lines 10-11) which corresponds to air, not to a polymer or low dielectric material as indicated in the table. Therefore, the table found in Jeng will not be relied upon.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2829

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

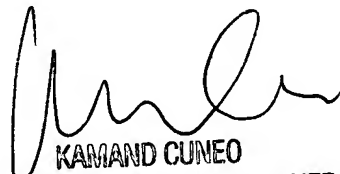
Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0957. See MPEP 203.08.

Any inquiry concerning this communication from the examiner should be directed to Lisa Kilday whose telephone number is (703) 306-5728. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo, can be reached on (703) 308-1233. The fax number for the group is (703) 305-3432. MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.

Lisa Kilday

LAK

6/17/03


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

U.S. DEPARTMENT OF COMMERCE

PATENT AND TRADEMARK OFFICE

EXAMINER'S CASE ACTION WORKSHEET

Application No.
10/099,641



Legal Instrument Examiner

CHECK TYPE OF ACTION

DATE OF COUNT

<input type="checkbox"/> Non-Final Rejection	<input type="checkbox"/> Restriction/Election Only	<input checked="" type="checkbox"/> Final Rejection
<input type="checkbox"/> Ex Parte Quayle	<input type="checkbox"/> Allowance	<input type="checkbox"/> Advisory Action
<input type="checkbox"/> Examiner's Answer	<input type="checkbox"/> Reply Brief Noted	<input type="checkbox"/> Non-Entry of Reply Brief
<input type="checkbox"/> Defective Notice of Appeal	<input type="checkbox"/> Interference Disposal SPE _____ (Approval for Disposal)	<input type="checkbox"/> Suspension (Examiner-Initiated) SPE _____ (initial)
<input type="checkbox"/> Defective Appeal Brief	<input type="checkbox"/> SIR Disposal (use only after FAOM)	<input type="checkbox"/> Supplemental Examiner's Amendment
<input type="checkbox"/> Miscellaneous Office Letter (With Shortened Statutory Period Set)	<input type="checkbox"/> Notice of Non-Responsive Amendment (With One Month Time Period set)	<input type="checkbox"/> Miscellaneous Office Letter (No Response Period Set)
<input type="checkbox"/> Abandonment after BPAI Decision	<input type="checkbox"/> Supplemental Action (excluding Examiner's Answer)	<input type="checkbox"/> Response to Rule 312 Amendment
<input type="checkbox"/> Letter Restarting Period for Response (e.g., Missing References)	<input type="checkbox"/> Interview Summary	<input type="checkbox"/> Authorization to Change Previous Office Action SPE: _____ (Initial)
<input type="checkbox"/> Abandonment	<input type="checkbox"/> Express Abandonment Date: _____	<input type="checkbox"/> Other Specify: _____

Examiner's Name: Lisa A Kilday

AU: 2829